DNREC Virtual Public Hearing

On the Application for a Distribution and Marketing Permit for Synagro Technologies (Docket #2020-P-W-0016)

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DIAL-in Number: 1-408-418-9388
Event Number (Access Code) 718 856 036

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Public Hearing on Synagro's Distribution and Marketing Permit Application

June 25th, 2020

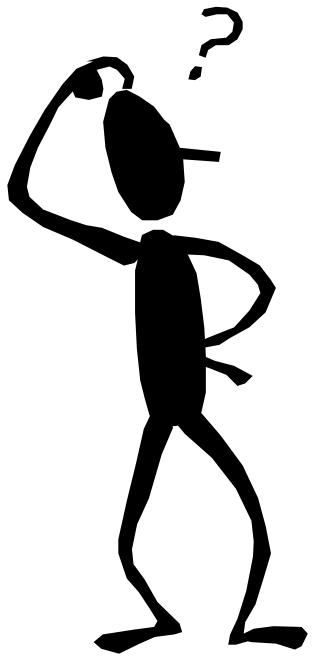
Department of Natural Resources and Environmental Control

Division of Water

Surface Water Discharges Section

Biosolids - Overview

- Biosolids are **not** raw sewage. They are one of the final products from the treatment of municipal wastewater at a wastewater treatment plant.



Biosolids - Overview

- Treatment digests (breaks down) the organic compounds and the remaining solids are thermally treated, producing fine particles ultimately considered Class A biosolids.

- Biosolids are a nutrient-rich slow release organic fertilizer product that can be utilized like animal manure but with minimal odor.

Biosolids Treatment Process

(For all 3 of the City of Philadelphia's Wastewater Treatment Plants)

- The City of Philadelphia's Wastewater Treatment Plants service over 2 million people
- Wastewater enters the plant where any trash, plastic, grit, fats, and oils in the wastewater are removed
- Next, wastewater undergoes anaerobic digestion where solids are broken down.
- Treated wastewater then goes into clarifiers that settle out solids.

Biosolids Treatment Process Continued

- Solids are piped to centrifuges and air dried to remove remaining liquid and concentrate the solids to ~ 28-30% solids.
- Next, biosolids are conveyed into a mixing unit where they are blended with previously dried and sized biosolids pellets to obtain a solids content of ~60%.
- The solids then undergo a "PFRP" to achieve the Class A biosolids designation. This facility uses the heat drying method, meaning the City must heat the solids to at least 80° C (176° F) and dried to at least 90% solids.
- Product must also be dried to at least 75% solids to meet VAR thus heat drying already achieves this requirement.
- After sampling is completed to demonstrate that regulatory requirements are met, the EQ biosolids (known as Granulite) can be distributed nationally in accordance with Federal and State requirements.

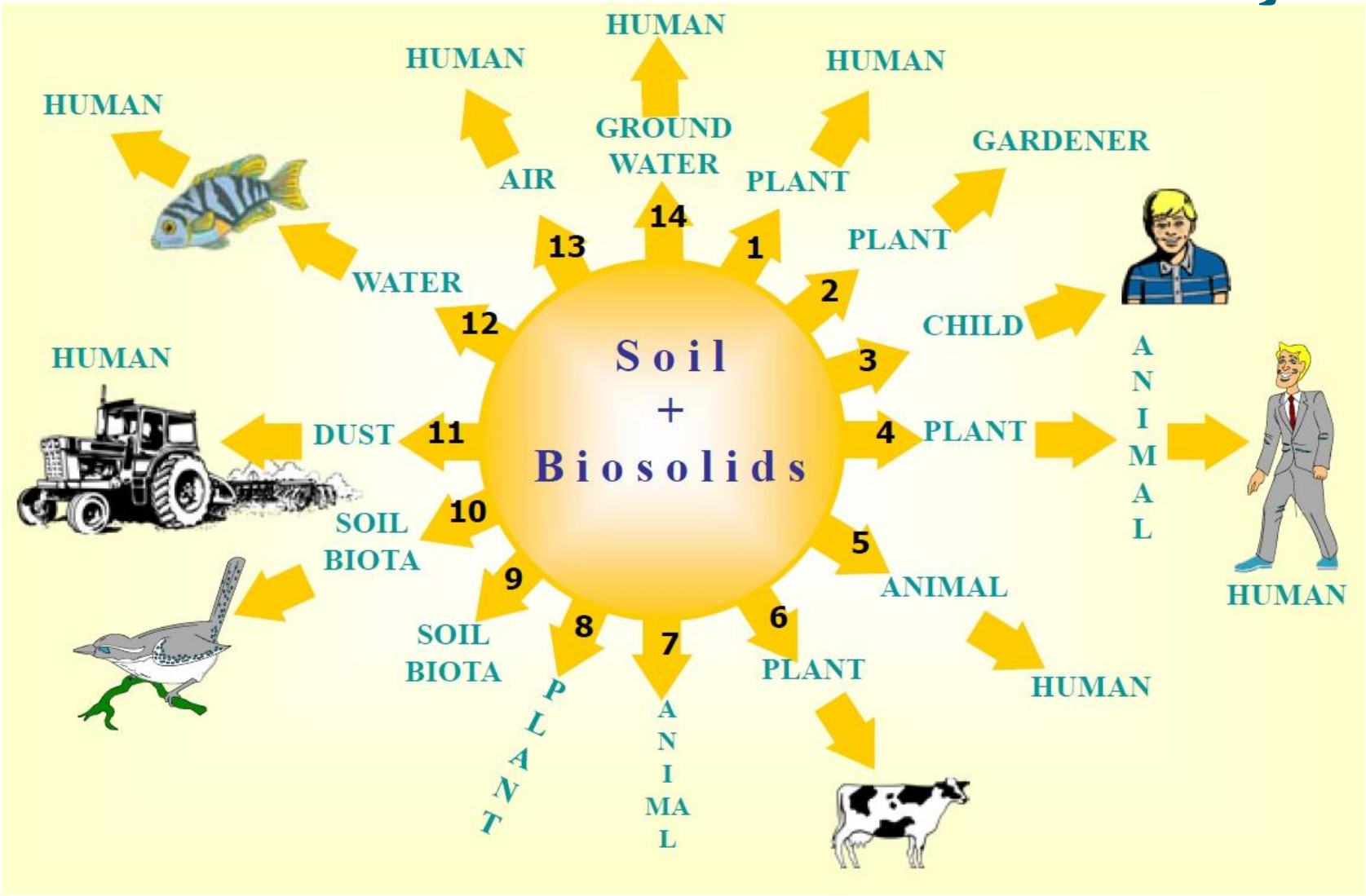
Biosolids Distribution Process

- Currently, the City of Philadelphia's Class A/EQ biosolids product (Granulite) is being utilized in Pennsylvania, Maryland, Florida, New York, and Virginia (and is approved for use in many other states).
- The purpose of the DM permit application is to allow Granulite to be distributed in the State of Delaware.
- The product would be utilized for activities that may include agricultural uses, landscaping, construction, soil blending, turf grass maintenance, and other Department approved purposes.
- Any products not meeting Class A/EQ standards would not be land applied in DE.

Benefits of Biosolids

- Biosolids contain essential nutrients for plant growth, such as nitrogen, phosphorus, zinc, copper, and more
- They contain slow-release nitrogen, reducing leaching potential
- Over time, application of biosolids increases the organic matter content of soil, resulting in improved water holding capacity & soil quality

EPA Risk Assessment - Pathways



Standards were developed for chemicals of concern and pathogens determined to be a risk

Emerging Contaminants

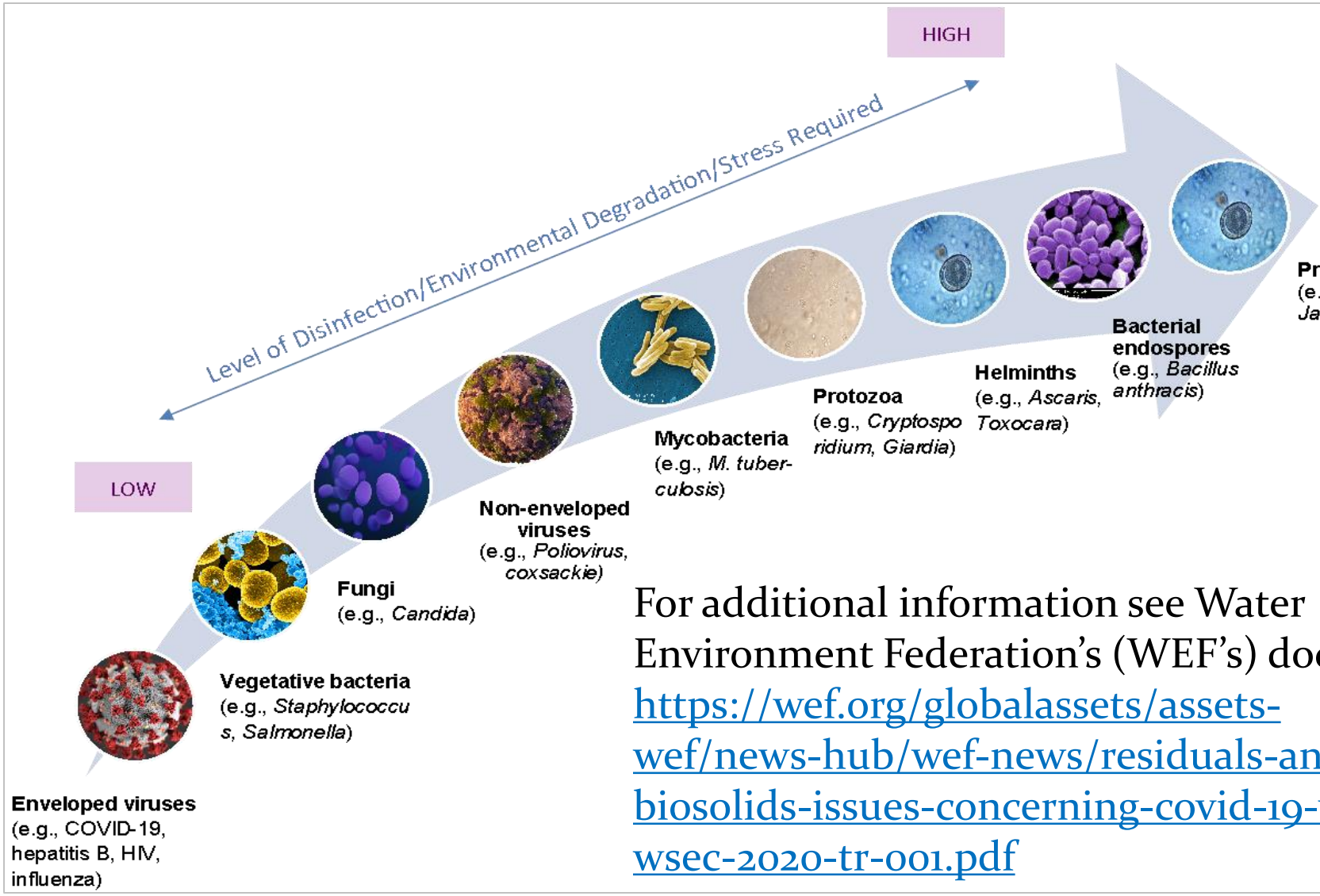
- Every 2 years, EPA is required to refine its risk assessments and look at contaminants that are present in biosolids.
- The EPA is required to establish numeric limits and management practices that protect public health and the environment from reasonably anticipated adverse effects of chemical and microbial pollutants during the use or disposal of biosolids.
- The risk assessments determine whether new or revised numeric standards are warranted under EPA's biosolids regulations.
- According to EPA, addressing the uncertainty around potential risk for pollutants identified in biosolids is the top priority for the EPA's Biosolids Program.
  - ✓ DE updates its standards to remain at least as stringent as federal requirements.

https://www.epa.gov/biosolids/biennial-reviews-sewage-sludge-standards

SARS-CoV-2 (COVID-19)

- SARS-CoV-2 (virus that causes COVID-19) requires lower levels of treatment for destruction VS many other pathogens found in biosolids.
- Class A pathogen reduction = highest level of biosolids pathogen reduction
- EPA Region III has stated, “We have no evidence that biosolids contain infectious SARS-CoV-2 virus when requirements under 40 CFR part 503 are met for Class A biosolids.”

SARS-CoV-2 (COVID-19)



For additional information see Water Environment Federation's (WEF's) document: https://wef.org/globalassets/assets-wef/news-hub/wef-news/residuals-and-biosolids-issues-concerning-covid-19-virus-wsec-2020-tr-001.pdf

Class A/EQ Monitoring Requirements

Parameter	**Unit Measurement**	**Minimum Sampling Frequency**	**Sample Type**
Fecal Coliform or Salmonella	MPN (dry weight basis)	Monthly	Composite
Dry Solids Content	%	Daily	Composite
Temp	Degrees Centigrade	Every 2 hours	Grab

EQ Biosolids Pollutant Limits

All EQ biosolids must be under the below limits.

Arsenic 41 mg/kg	Cadmium 39 mg/kg	Chromium 1200 mg/kg	Copper 1500 mg/kg
Lead 300 mg/kg	Mercury 17 mg/kg	Molybdenum 18 mg/kg	Nickel 420 mg/kg
PCB's 3 mg/kg	Selenium 36 mg/kg	Zinc 2800 mg/kg	- - -
Fecal Coliform 1000 colonies/gm (MPN)		Salmonella Density (sp) 3/4gm (MPN)	

Based on EPA's risk assessment, biosolids applied with metals under the pollutant concentration limits pose no adverse effect thus tracking total metal loading rates at application sites is not necessary.

EQ Sampling Requirements

Parameter	Measurement	Minimum Frequency	Sample Type
Moisture content	percent	Daily	Composite
Total Nitrogen as N (dry weight basis)	percent	Monthly	Composite
Organic Nitrogen as N (dry weight basis)	percent	Monthly	Composite
Ammonium as N (dry weight basis)	percent	Monthly	Composite
Nitrate Nitrogen as N (dry weight basis)	percent	Monthly	Composite
Phosphorus (dry weight basis)	percent	Monthly	Composite
Potassium (dry weight basis)	percent	Monthly	Composite
Volatile solids	percent	Monthly	Composite
Fecal Coliform (Colonies/gm)	MPN	Monthly	Composite
pH	S.U.	Monthly	Composite
Arsenic (dry weight basis)	mg/kg	Monthly	Composite
Cadmium (dry weight basis)	mg/kg	Monthly	Composite
Chromium (dry weight basis)	mg/kg	Monthly	Composite
Copper (dry weight basis)	mg/kg	Monthly	Composite
Iron (dry weight basis)	mg/kg	Monthly	Composite
Lead (dry weight basis)	mg/kg	Monthly	Composite
Mercury (dry weight basis)	mg/kg	Monthly	Composite
Molybdenum (dry weight basis)	mg/kg	Monthly	Composite
Nickel (dry weight basis)	mg/kg	Monthly	Composite
Selenium (dry weight basis)	mg/kg	Monthly	Composite
Zinc (dry weight basis)	mg/kg	Monthly	Composite
PCB's (dry weight basis)	mg/kg	Annually	Composite
Priority pollutant scan (see NOTE)	---	Every 3 years	Composite

Contact Information

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Thank you for joining us. We will accept comments on this matter through July 6, 2020.

You can submit your comments using the DNREC comment form, via email, or by USPS mail, as noted on the hearing event page.

A copy of the Court Reporter's full, verbatim transcript will be posted on this hearing's web page as soon as it becomes available.

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